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Analyzing Peer To Peer File Sharing

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Abstract

In this research project I studied the peer to peer file sharing problem. Learning and analyzing several of the most impotent websites and software that are being used to file share and help protect those who file share. I also briefly analyzed some forensic tools used to collect data from computers in order to help solve the file sharing problem. After analyzing all the data collected ask yourself, what extent of file sharing should be legal or illegal?

Introduction:

File sharing is the practice of distributing or providing access to digitally stored information, such as computer programs, multimedia (audio, image and video), documents, or electronic books.

Peer-to-peer file sharing is different from traditional file downloading. In peer-to-peer sharing, the user uses a software program (rather than your Web browser) to locate computers that have the file you want. Because these are ordinary computers like yours, as opposed to servers, they are called peers.

Torrent Sites:

BitTorrent

BitTorrent is a free P2P software application that has attracted a loyal following among those interested in sharing movies and television programs.

BitTorrent is **open-source software**, which means the program is available to you and to software developers for free. Therefore, some developers have created their own versions of BitTorrent software, and you can choose from a number of client programs.

uTorrent

Known as both "u-torrent" and "micro torrent", this is the most popular torrent tool today. uTorrent has all the functions a torrent downloader will ever need, and it only requires 1 MB of hard drive space and memory. uTorrent has all the downloading and seeding performance of its competitors, but with minimal impact to the rest of your computer's speed.

Vuze/Azureus

Vuze is a large software product that offers a smorgasbord of features

Transmission BitTorrent

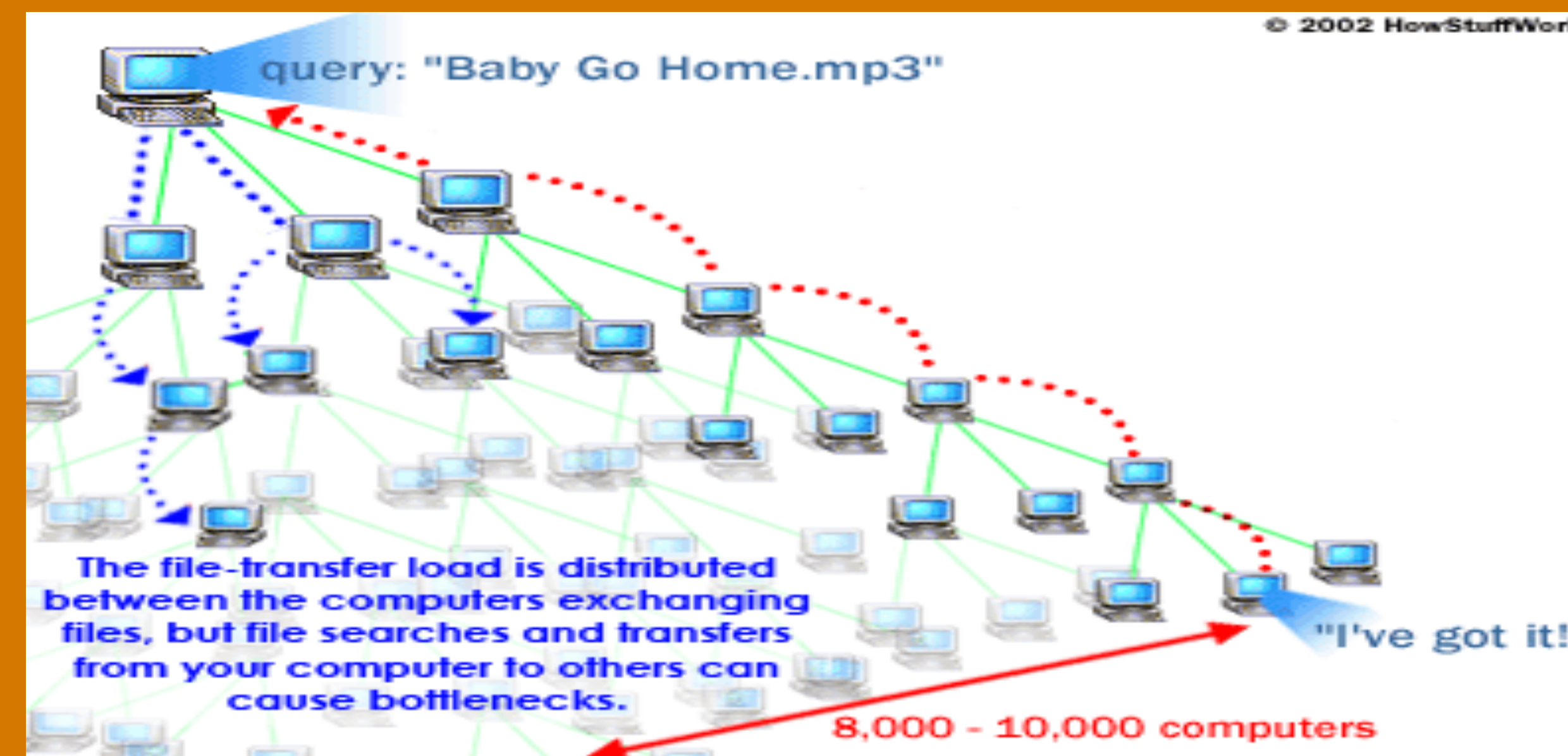
Mac users and Linux users: this product is for you. Transmission is a lean product that allegedly uses the smallest memory footprint of any torrent client today. It's open source, clean-looking, and a favorite amongst Mac users.

Basic File Sharing Information:

The user runs a peer-to-peer file-sharing software (for example, BitTorrent) on their computer and sends out a request for the file the user wants to download. To locate the file, the software queries other computers that are connected to the Internet and running the file-sharing software. When the software finds a computer that has the file you want on its hard drive, the download begins.

Others using the file-sharing software can obtain files they want from your computer's hard drive.

File Sharing Example:



Different Torrent sites:



Pirate Bay Screen Shot:



Forensic Tools Used:

ATC-NY developed P2P Marshal™ to automatically analyze peer-to-peer (P2P) usage on disk images (Forensic Edition) and live systems (Field Edition). It detects what P2P client programs are, or were, present, extracts configuration and log information, and shows you the shared (uploaded) and downloaded files.

- P2P Marshal 4.0.0 Forensic Edition, released November 2012, reads **disk image files -- a software tool that runs on a forensic investigator's workstation to detect and analyze peer-to-peer software use.**
- P2P Marshal 4.0.0 Field Edition released November 2012, supports **live investigation -- is available on a USB flash drive only and requires no installation to run. The Field Edition provides the capability to run on a live computer in the field. With all of the features of the Forensic Edition, the Field Edition can also be used on an investigator's workstation in the lab to examine disk images**

Laws :

Unauthorized Copying is Against the Law

Copyright law protects the value of creative work. When you make unauthorized copies of someone's creative work, you are taking something of value from the owner without his or her permission. Most likely, you've seen the FBI warning about unauthorized copying at the beginning of a movie DVD. Though you may not find these messages on all compact discs or music you've downloaded from the Internet, the same laws apply.

Federal law provides severe civil and criminal penalties for the unauthorized reproduction, distribution, rental or digital transmission of copyrighted sound recordings. (Title 17, United States Code, Sections 501 and 506).

Conclusion / Further Work:

After two months of research I have come to a conclusion that forensic tools used to catch peer to peer file sharing users are limited. With the level of freeware and open-source software, file sharing is very difficult to trace.

As further research I would use some of the forensic tools to gather more information about this fast growing method in order to help improve forensic tools.

References:

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